

#### **IV. AMENDMENTS TO THE CLAIMS**

1. (Withdrawn) A substrate processing method, comprising the steps of:
  - (a) coating a resist on a substrate so as to form a resist film thereon;
  - (b) controlling a distribution of a dissolving characteristic against a developing solution used for a developing process in a direction of a thickness of the resist film, andwherein the step (b) being performed before the developing process is performed for the substrate coated with the resist film.
2. (Withdrawn) The substrate processing method as set forth in claim 1,
  - wherein the step (a) has the step of coating on the substrate a resist that contains a material having an affinity against the developing solution used for the developing process, and
  - wherein the step (b) has the step of performing a predetermined process for the resist coated on the substrate so as to nonuniformly distribute the material in the direction of the thickness of the resist film.
3. (Withdrawn) The substrate processing method as set forth in claim 2,
  - wherein the step (b) has at least one of a heating process and a pressure reducing process.
4. (Withdrawn) The substrate processing method as set forth in claim 1,
  - wherein the step (b) has the step of supplying the developing solution used for the developing process to the resist coated on the substrate so as to form an uneasily dissolvable layer on a front surface side of the resist film.
5. (Withdrawn) A substrate processing method, comprising the steps of:
  - (a) coating a resist on a substrate so as to form a resist film thereon; and
  - (b) controlling a moisture content of the resist coated on the substrate in a direction of a

thickness of the resist film.

6. (Withdrawn) The substrate processing method as set forth in claim 5, further comprising the step of:

drying the resist film coated at the step (a) before the step (b),

wherein the step (b) is performed by supplying moisture on a surface of the dried resist film so as to control the moisture content.

7. (Withdrawn) A substrate processing method, comprising the steps of:

(a) coating a resist on a first surface of a substrate;

(b) heating the resist coated on the first surface of the substrate from the first surface side and a second surface side opposite to the first surface of the substrate; and

(c) half-exposing the heated resist.

8. (Withdrawn) The substrate processing method as set forth in claim 7,

wherein the step (b) has the steps of:

(d) heating the substrate from the first surface side at a first temperature; and

(e) heating the substrate from the second surface side at a second temperature.

9. (Withdrawn) The substrate processing method as set forth in claim 8,

wherein the step (d) is performed by heating the substrate from the first surface side at a temperature in the range from 70 °C to 200 °C.

10. (Withdrawn) The substrate processing method as set forth in claim 8,

wherein the step (e) has the step of heating the substrate from the second surface side at a temperature in the range from 90 °C to 150 °C.

11. (Withdrawn) The substrate processing method as set forth in claim 7, further comprising the step of:

(f) controlling a pressure applied at least to the resist during the step (b).

12. (Withdrawn) The substrate processing method as set forth in claim 11,  
wherein the step (f) has the step of reducing the pressure applied to the resist  
from the atmospheric pressure by 5 Pa to 100 Pa.

13. (Withdrawn) The substrate processing method as set forth in claim 7,  
wherein the step (b) has the step of controlling a heating time for which the  
resist is heated in the range from 60 seconds to 300 seconds.

14. (Withdrawn) A substrate processing method, comprising the steps of:

(a) coating a first resist that exposure-reacts with a first exposure energy on a  
substrate;

(b) coating a second resist that exposure-reacts with a second exposure energy  
that is smaller than the first exposure energy on the surface of the first resist; and

(c) half-exposing the first resist and the second resist with a mask that causes  
the first resist to be exposed with the first exposure energy and the second resist to be  
exposed with the second exposure energy.

15. (Withdrawn) The substrate processing method as set forth in claim 14, further  
comprising the step of:

(d) drying the first resist, wherein the step (d) is performed between the step (a)  
and the step (b).

16. (Withdrawn) The substrate processing method as set forth in claim 14,  
wherein the step (a) is performed while the substrate is being rotated.

17. (Withdrawn) The substrate processing method as set forth in claim 14,  
wherein the step (a) is performed while moving a first nozzle for coating the first  
resist on the surface of the substrate; or

wherein the step (b) is performed while moving a second nozzle for coating the second resist on the surface of the substrate.

18. (Withdrawn) The substrate processing method as set forth in claim 14,  
wherein the step (a) is performed while moving a first nozzle for coating the first resist on the surface of the substrate; and  
wherein the step (b) is performed while moving a second nozzle for coating the second resist on the surface of the substrate.

19. (Withdrawn) The substrate processing method as set forth in claim 14, further comprising the step of:  
(e) coating an organic solvent on the surface of the first resist,  
wherein the step (e) is performed between the step (a) and the step (b), and  
wherein the second resist is coated on the surface of the first resist coated with the organic solvent.

20. (Withdrawn) The substrate processing method as set forth in claim 14,  
wherein the second exposure energy is 50 percent to 70 percent of the first exposure energy.

21. (Withdrawn) A substrate processing method, comprising the steps of:  
(a) coating a first resist that exposure-reacts with a first exposure energy on a substrate;  
(b) flattening a front surface of the first resist coated on the substrate;  
(c) coating a second resist that exposure-reacts with a second exposure energy that is smaller than the first exposure energy from the front surface side of the flattened first resist; and  
(d) half-exposing the first resist and the second resist with a mask that causes the first resist to be exposed with the first exposure energy and the second resist to be exposed with the second exposure energy.

22. - 30. (Canceled)

31. (New) A substrate processing apparatus, comprising:

resist film forming means for coating a resist on a substrate so as to form a resist film thereon;

controlling means for controlling a distribution of a dissolving characteristic of the resist against a developing solution used for developing the resist in a direction of a thickness of the resist film such that the resist includes an uneasily-dissolvable layer on a front side and an easily-dissolvable layer on a rear side, prior to developing the substrate to which the resist is coated.

32. (New) The substrate processing apparatus as set forth in claim 31,

wherein the resist film forming means coats on the substrate a resist that contains a material having an affinity against the developing solution used for the developing process, and

wherein the controlling means performs a predetermined process for the resist coated on the substrate so as to nonuniformly distribute the material in the direction of the thickness of the resist film.

33. (New) The substrate processing apparatus as set forth in claim 32,

wherein the predetermined process has at least one of a heating process and a pressure reducing process.

34. (New) The substrate processing apparatus as set forth in claim 31,

wherein the controlling means supplies the developing solution used for the developing process to the resist coated on the substrate.

35. (New) A substrate processing method, comprising:

(a) coating a resist on a substrate so as to form a resist film thereon;

(b) controlling a distribution of a dissolving characteristic of the resist against a developing solution used for developing the resist in a direction of a thickness of the resist film such that the resist includes an uneasily-dissolvable layer on a front side and an easily-dissolvable layer on a rear side, prior to developing the substrate to which the resist is coated.

36. (New) The substrate processing method as set forth in claim 35,

wherein the step (a) has the step of coating on the substrate a resist that contains a material having an affinity against the developing solution used for the developing process *r* and

wherein the step (b) has the step of performing a predetermined process for the resist coated on the substrate so as to nonuniformly distribute the material in the direction of the thickness of the resist film.

37. (New) The substrate processing method as set forth in claim 36,

wherein the predetermined process has at least one of a heating process and a pressure reducing process.

38. (New) The substrate processing method as set forth in claim 35,

wherein the step (b) has the step of supplying the developing solution used for the developing process to the resist coated on the substrate.